# IHEF Bachelor Project 2014 – week 14 t/m 26

|  |  |
| --- | --- |
| Naam van project: | Dark Matter searches |
| Experiment: | XENON1T |
| Begeleider: | Andrea Tiseni |

|  |
| --- |
| Beschrijving project:Dark matter is one of the most challenging problems in the physics today and many collaborations and universities are improving their efforts to understand the composition of the Dark Matter.The Xenon Experiment is currently one of the most important Dark Matter direct- detection experiment .Xenon 100 is currently running and taking data at Gran Sasso (Italy).The next generation experiment Xenon1T is planned to start the acquisition of data in 2015.  |

|  |
| --- |
| Doel: The Student will be introduced to the Dark Matter physics understanding why we need Dark Matter to explain physics beyond the standard model. He will perform a Dark Matter interaction-rate calculation for different Dark Matter masses. Then he will be introduced to the Xenon Dark Matter Analysis and he will understand how a dark matter experiment works. The final goal is to perform sensitivity study for the Xenon 1T or multi Ton experiment. |